Constructing the Right Disciplinary IS Questions

Full Paper

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Abstract
This essay argues for the primacy of asking disciplinary research questions instead of just research questions. Following how identities of academic disciplines are constructed based on their unique discourses, research questions become disciplinary when they address what is relevant to that unique discourse. The higher the level of cross-disciplinary activity the field supports, especially toward interdisciplinarity, the more interesting and valued the questions become. It argues that a critical step towards becoming an integrative interdiscipline is for the IS field to ask questions that are not being asked by other disciplines, or questions that other disciplines are incapable of asking. These questions become the right questions that support the establishment of the IS field as an integrative interdiscipline. Addressing these questions will require the IS field to build its own standards and methods of inquiry, its own culture and values that reflect its unique identity. To ensure that the field continues to consolidate itself as a distinct interdisciplinary, this essay proposes that IS researchers ask, at the beginning of their research study, “What’s IS about it?” The examples of information technology innovation and NeuroIS are given to demonstrate the importance of asking this question.

Keywords
Information systems (IS) philosophy, research question, disciplinarity, multidisciplinarity, interdisciplinarity, IS theory

Introduction
The organizational sciences and the IS field are beginning to realize the importance of questions (Alvesson and Sandberg 2011; Alvesson and Sandberg 2013a; Alvesson and Sandberg 2013b; Locke and Golden-Biddle 1997). Intuitively, researchers often focus on providing and constructing answers to questions, but Alvesson and Sandberg (2013a) consider the construction of the questions to be the more critical aspect of research because not only do questions make it possible to develop new knowledge, they encourage reflection and trigger intellectual activity; answers, on the other hand, tend to encourage closure and inactivity. In other words, problematizing the concerns of the research by asking questions that interrogate and challenge the assumptions underlying existing literature is more likely to produce interesting results (Alvesson and Sandberg 2013a; Slife and Williams 1995). This essay extends the argument presented by the organizational sciences and other philosophers on the primacy of questions by reconceptualising the research question that’s often asked at the beginning of any research into asking instead the right disciplinary research question. In other words, especially at the start of any IS research project, IS researchers should be asking the disciplinary question instead of the regular research question. Drawing from the concepts of disciplinary identity and notions of the discursive formation, value of research, and theories of inter-disciplinarity, this essay argues that the right questions to ask when undertaking research are questions that are not being asked by other disciplines, or questions that other disciplines are incapable of asking. If the IS field does not ask these kinds of questions, the progress of the field will likely be hindered because the research is not consistent with the proper concerns of the field.

First, this essay argues that the IS field has been stuck in research programs that are neither compelling nor interesting for far too long. A possible solution out of this conundrum lies in understanding how academic disciplines shape their identities and subsequently, their research programs, based on their
unique discourses. It argues that in order to generate compelling and interesting research, and therefore at the same time, advance the IS field, questions that are addressed in research should be those that are directly relevant to the field’s unique discourse and integrate the multidisciplinary discourses operating within the IS field. Using examples of IS research in top journals, the essay argues that not only should IS researchers be asking, “what’s IS about this research?”, they should be constructing those numerous interesting questions that only the IS field is best equipped to address.

**The Boxed-In IS Research**

In the organization sciences, Alvesson and Sandberg (2013b) place the blame for the lack of innovative and influential research in the management discipline on the dominance of “incremental gap-spotting research” (p. 128). Other organization science scholars point to excessive borrowing (Oswick et al. 2011), and exclusionary polemical tendencies that favor specific types of positivist and functionalist research (Grey 2010). Similar concerns, voicing the need to develop research that is more forward-looking, influential and socially relevant, have also occupied the attention of IS scholars (Agarwal and Lucas Jr. 2005; Applegate 1999; Benbasat and Zmud 1999; Grover 2013; Grover and Lyytinen 2015; Grover et al. 2008; Hirschheim and Klein 2003; Klein and Hirschheim 2008). These inter-linked issues are all related to how research is designed and formulated. As some IS scholars have asked ‘How many of these papers [in leading IS journals] do you find truly original, challenging and excite you? We fear that the response might be ‘not many.’ (Avison and Malaurent 2014, p. 327).

In order to overcome these problems in the organization sciences, Alvesson and Sandberg (2014, p. 967-969) propose moving away from “boxed-in” research towards “box-breaking” and “box-transcending” research. We agree with Alvesson and Sandberg (2013b; 2014) and analyze an additional factor that contributes to these problems both in the organization science and IS fields. We argue that the IS field should focus on asking the right research questions when designing their research. Using co-citation analysis, Córdoba et al (2012) show that historically, IS research has focused on behavioral-type research stemming from its close proximity with the organization sciences, primarily in adoption, acceptance and rejection of IS in organizations, many of which lend themselves to using positivistic quantitative approaches. Bryant (2008) laments such a state of affairs where IS research applies a rationalist view of systems that are readily amenable to hierarchical, command-and-control type management, often ignoring issues of power and difference, its creative and interpretive natures, and where ultimately more is assumed to mean better. Much of these concerns can be traced back to how the IS field views its own disciplinary identity, which itself continues to be a perennial problem (Benbasat and Zmud 2003; Gray 2003; Hassan 2011). In a recent Delphi study of 143 IS academics (Becker et al. 2015) which explored the grand challenges facing the IS field, the results concluded that by far, its greatest challenge concerns its identity and relevance.

**Disciplinary Identities and Discursive Formations**

The identity of an academic field is intimately connected to the kinds of research it undertakes and the kinds of questions it addresses. This statement may seem like a truism for established disciplines, but in the case of younger multi-disciplinary fields such as the IS field, the situation may not be so clear. Biological research will address questions concerning biology, and the same can be said about research in physics and the social sciences such as sociology and economics. In the IS field however, there is a substantial amount of research on the economics of technology and IS. So, does that genre of research address economic questions or IS questions? Is the field of economics, with its own theories, laws, econometric methods and other purely economic resources, capable of addressing these questions without any help from the IS field? This is where the connection with disciplinarity and disciplinary identity becomes evident.

According to Foucault (1972), the identity of an academic field starts to take shape when a group of people engages in a discourse on a subject or branch of study grounded by a set of rules—the discursive formation—that govern the formation of “statements” concerning the objects and concepts of study. Other scholars refer to this process of formation of statements as “differentiation” (Hambrick and Chen 2008; Merton 1973) in which certain important phenomena are perceived as being inadequately addressed, or which existing fields of study are unable to address. The scholarly task of addressing new emerging
works. Yet, these scholars identified with each other based on the studies they were undertaking. As was also working on alchemy with Robert Boyle (Debus 2004), before it was replaced by modern answers not just to any question, but the discipline of the field. And since technology is rapidly changing, the IS field is caught chasing its own tail, as it endlessly distinguishes the identity of a discipline. This discursive view of disciplinary identity differs from the more research questions are inherently disciplinary, and it is the set of disciplinary questions that ultimately creates statements that belong to a specific discourse such that it is possible to recognize economic science from IS discourse. Toulmin (1972) calls this “discursive formation” the field’s “intellectual ideals” (pp. 150-154) that that exist beyond any specific period, scholars or their oeuvres. These rules of formation and intellectual ideals make certain questions admissible in order to explain the phenomenon related to the field, and exclude other questions. The explanations provided to those questions express answers not just to any question, but only to questions that address the intellectual ideals of that field. Hence when Newton was working in the field of optics, he was asking “Why does light split into different colours when it exits the prism?” This question led to other questions (e.g., “Why is the refracted light oblong, regardless of the shape of the hole or prism?”), which in turn lead to even more prodigious questions (e.g. “Is light a body?”). Just like the natural sciences, questions in the social sciences not only relate to the field, and exclude other questions. Instead of relying on the objects of study shaping the identity of the field, Foucault (1972) argues that it is the dynamic and often unconscious establishment of rules that shapes how the object is studied—the discursive formation (pp. 31-39)—which constitutes the identity of that field. The operation of these rules creates statements that belong to a specific discourse such that it is possible to recognize economic discourse from psychological discourse, biological discourse from medical discourse, and computer science from IS discourse. Toulmin (1972) calls this “discursive formation” the field’s “intellectual ideals” (pp. 150-154) that that exist beyond any specific period, scholars or their oeuvres. These rules of formation and intellectual ideals make certain questions admissible in order to explain the phenomenon related to the field, and exclude other questions. The explanations provided to those questions express answers not just to any question, but only to questions that address the intellectual ideals of that field. Hence when Newton was working in the field of optics, he was asking “Why does light split into different colours when it exits the prism?” This question led to other questions (e.g., “Why is the refracted light oblong, regardless of the shape of the hole or prism?”), which in turn lead to even more prodigious questions (e.g. “Is light a body?”). Just like the natural sciences, questions in the social sciences not only lead the inquiry—they characterize it. When Durkheim (1951/1897, p. 324) asked the question “why is it that in every society, a stable proportion of the population commit suicide in any given period?” he wasn’t focusing on the state of mind, individual despair, neurosis, depression or any psychological state of individual members of the society, as one would expect in the case of suicide—he was linking suicide to his discipline, sociology. As a sociologist, his concerns were on the social dimensions of this phenomenon, about how every society is predisposed to these kinds of deaths, and how societal institutions could prevent or encourage suicide. The questions that he was asking distinguished his discourse from that of medicine, psychiatry or psychology, and as a result, went on to build one of the most acclaimed works of sociology. The relationship between questions and the discursive formation supports the notion that research questions are inherently disciplinary, and it is the set of disciplinary questions that ultimately distinguishes the identity of a discipline. This discursive view of disciplinary identity differs from the more common “object of study” view that IS research is often characterized. Thus, in IS, we study information technology (IT), or its adoption, instead of figuring out which discursive formation is best suited for the field. And since technology is rapidly changing, the IS field is caught chasing its own tail, as it endlessly continues to research the next big thing that comes along.

**The Right Questions: Integrating Multidisciplinary Discourses**

Early disciplines developed from a process of fission in which the disciplines extract themselves from natural or moral philosophy or from their parent discipline in an act of specialization. The specialization seen in disciplines is akin to Adam Smith’s division of labour, where in the case of disciplines, productivity takes the shape of an advance in knowledge. As an historian of research universities noted, “[A] discipline is, above all, a community based on inquiry and centered on competent [emphasis added] investigators. It consists of individuals who associate in order to facilitate intercommunications, and to establish some degree of authority over the standards of their inquiry” (Geiger 1986, p. 29). Thus, when Durkheim specifically formulated his research, it was done according to the rules of the discipline of sociology.
adding value and enhancing the authority of sociology, and not medicine, psychiatry or psychology. This was the state of affairs with traditional disciplines throughout the sixteenth through the eighteenth century. Academic institutions began competing for the rights of producing knowledge, proclaiming themselves as open-minded seekers of the truth, resulting in the break-up of “natural philosophy” into the specialized subjects of physics, biology, and chemistry in the eighteenth century, and later resulted in the emergence of the social sciences from moral philosophy (Kristeller 1951). By the nineteenth century, “discipline” was synonymous with “divisions of knowledge,” and took the physical form of university departments within the oldest universities in Europe and United States. The university gave academics a kind of “cognitive exclusiveness” over their area of study.

The value of these disciplines lay in their uncanny ability to formulate and entertain questions whose answers we know that we do not know. The human ability to address questions is the foundation of science. Science has always consisted of set of propositions, a set of unanswered questions to which those propositions gave rise to, and a set of principles, methods and devices for finding answers to those questions (Meyer 1995). With the help of a whole slew of disciplines, many questions that were unanswered are now answered. With the help of physics, the answer to the question about what makes objects fall, is found to be the same as the answer to the question about what makes the planets move. With the help of biology, the answer to the question “what is life?” opens a whole universe of study in genetics. Each discipline carves out an area of knowledge meant to serve mankind and it is this system of control over the discourse of that knowledge that provides the discipline with its authority and value.

Within this last century, increasing specialization is driving disciplines to develop in the manner closer to fusion rather than fission. Modern disciplines like social psychology, biochemistry, molecular biology or criminology are not formed by extracting themselves from their parents, but by bringing together elements of different disciplines into a new unity. These forms of interdisciplinarity emerge as disciplines collaborate and use different resources to address an area of reality or experience otherwise unavailable. What appeared to be impermeable boundaries between the disciplines began breaking down. The IS field is also among those fields of study that emerged as the result of the fusion of several different disciplines. The question facing the IS field is “What kind of cross-disciplinary activity is it?” Is the IS field merely borrowing from its reference disciplines various theories, techniques and research methods in order to solve problems in the domain of information technology? Or is the IS field integrating and developing its own discursive formation that is unique compared to its reference disciplines? Multidisciplinary is temporary and does not support the emergence of a new field of study. It is capable of solving massive projects and difficult problems, but it too is temporary and unsustainable over a longer period of time especially once the target problem is resolved. A multidisciplinary field tends toward incoherency because it is difficult to manage and even if it forms some kind of unity, it is a unity that is multimodal, with its individual elements struggling for domination and control. The problem with the multimodal field starts with the lack of loyalty of researchers in the field (as researchers move in and out across boundaries) making it difficult for the field to reach organizational and intellectual “critical mass.” Second, the complexity of the many different disciplines increases the “burden of comprehension” for the members in the field (the context, history and status of other fields become the burden of the researcher), and this burden increase further as the topical agenda expands. Juggling the multidisciplinary state is at best difficult and fraught with risks. We can safely say that multidisciplinarity is not the best option for the development of the IS field. A truly integrative form of cross-disciplinary activity is interdisciplinary research. A deeper self-understanding, exploration and synthesis of the potential and limits of other disciplines are accomplished and as a result, new questions that were unavailable to the contributing discipline are addressed.

Unfortunately, the state of the IS field symptomizes the characteristics of multidisciplinarity. Its nature has become so mutable (King and Lyttinen 2004; Klein and Hirschheim 2006; Lyttinen and King 2004) such that the criteria for judging conceptual novelties and new knowledge areas is ill defined, which makes it difficult to reach consensually determined set of ideals. Not unexpectedly, the IS field is consistently charged for being eclectic and for lacking rigor and relevance. Perhaps the most significant problem multidisciplinary fields like IS face is its continuing persistence in answering questions that are already addressed by other fields. As a senior author once noted, IS articles could “as easily and appropriately have been published in journals from computer science, applied mathematics, economics, organizational studies, psychology and so on” (King 1993 p. 293). The solution to this conundrum lies in interrogating the questions that are often introduced at the beginning of every research study as that
We believe that in order for these research questions to be truly disciplinary research questions, they need to address questions that are not being asked by other disciplines, or questions that other disciplines are incapable of asking. What does it mean when disciplines are incapable of asking those questions? That could mean that other disciplines, by themselves, lack the necessary tools, knowledge or techniques that only an interdiscipline could provide. It could also mean that the other disciplines may not find those areas of study of great interest to their scholars, or that the areas of study are not high in the disciplines list of priority areas. The higher the level of cross-disciplinary activity the field demonstrates, the more interesting and valued the questions become. An example of this is the field of Women’s Studies. It emerged as an academic field because there was a strong sense on the part of many people that there were many aspects of the human experience that were not being given sufficient attention. It did not mean that women were not being studied in the sciences. The object of women is studied in sociology, psychology, and even political science. And yet, women’s studies still emerged. Why? Because there was a need to study the object of women not as a by-product of social forces as in sociology, or a kind of mental object as in psychology, or the center of feminist political activity, much less as a confounding or ignored variable in scientific studies, something which also happened. There were questions in these areas that were not being addressed. In other words, Women’s Studies are asking the questions that nobody else is asking.

Another aspect of the disciplinary research questions is how they harmonize with the field’s intellectual ideals. The questions that the natural sciences are concerned about are represented by the gap between the natural scientists’ explanatory ideals (e.g. nature’s atomic structure) and the current accomplishments of those scientists to account for the features of the natural world (Toulmin 1972). Because of the limits placed on these intellectual ideals, natural scientists face dilemmas and tensions that cannot be reconciled. For example, Einstein’s equation $E=mc^2$ made possible the atomic bomb, although Einstein himself would have never thought that would be the equation’s ultimate application (Isaacson 2008). The intellectual ideals of the social sciences cannot offer the same excuse because the social sciences consider social values and ethics as part of their intellectual ideals. IS scholars have not articulated nor have they agreed on the IS field’s intellectual ideals, but if the IS field is at least a kind of social or human science, it too needs to ask questions related to values and ethics that other disciplines have not addressed. Some of the concerns, such as the implications of IT in constraining or improving the human condition, have been raised within the critical genre of the IS field (Myers and Klein 2011).

**What’s IS about the Research?**

Following from the previous section about asking the right questions, this section elaborates on the shape of those right questions. It proposes that IS researchers, when considering any research study, should ask the question, “What’s IS about it?” It is easy enough to say that IS research should address questions that are not being asked by other disciplines, or questions that other disciplines are incapable of asking. However, many avenues of research are already being pursued leaving little space for the IS field. Also, those questions may not be relevant to IS, which is why they are not addressed in IS. The question as to whether they are being asked or not, or whether other disciplines are capable of asking those questions can be unpacked into four possibilities: (1) Non IS-relevant question—these should not be addressed regardless of whether other disciplines are asking them or not, (2) IS-relevant questions that are not being asked, (3) IS-relevant that are being asked, and the disciplines that are asking them are addressing them satisfactorily, and (4) IS-relevant questions that are being asked but the disciplines that are asking them are not addressing them satisfactorily. The right questions to ask are, (2) those IS-relevant questions that are not being asked by other disciplines, and (4) those IS-relevant questions that are being asked, but not addressed satisfactorily.

The IS field itself was a product of questions that other disciplines such as management, computer science, social psychology, sociology or any of its purported “reference disciplines” have not satisfactorily addressed. These questions circumscribe the IS field’s contribution to other fields, and if there are theories to be got, it will be in answering or addressing such questions. This does not mean that we should stay away from researching other pure disciplines because such research enriches our understanding and the most interesting research has always been at the boundaries between disciplines; rather, it is important for us to expend our field’s scarce intellectual resources on enhancing our own field rather than other disciplines.
To demonstrate how interrogating research questions may assist IS researchers in constructing the right questions, we offer two research streams in IS that have been proposed: digital innovations and neuroIS. It is not the goal of this paper to single out these two areas of study in the IS field or to alienate their authors. The principles elaborated can be applied to virtually all areas of study in IS since they all make up the IS field and it is the IS field as a whole that is experiencing stagnancy and need for more compelling research. Instead, the goal is to suggest ways in which these areas can be transformed into becoming avant-garde areas of research.

Digital innovation (Fichman et al. 2014) is proposed as a “fundamental and powerful concept” for the IS curriculum and for IS research to rally around. The following research programs within these innovation stages are suggested to support this goal:

1. **Discovery – invention**, the creation of something new through a firm’s own creative process or selection, the finding and evaluating an innovation.
2. **Development of innovation – the packaging, configuration and integration with other technologies.**
3. **Diffusion of innovation – deployment and assimilation.**
4. **Impact of innovation – intended and unintended impacts on individuals, organizations and society.**

The problem with these very generic stages of innovation research in IS is that any discipline (e.g. computer science or management) can claim jurisdiction in any of these areas (Abbott 1988), so what makes the IS field any different from these other disciplines? This unique value in the IS field is what Fichman et al (2014) sought to establish by proposing that the IS field focus on the central question “How does IT transform business and society?” This is not new, but the link to digital innovation is offered via several different kinds of innovation, including “process innovation,” “product innovation,” and “business model innovation” in which all the above stages can apply. Fichman et al (2014) claims that the management discipline has ignored technology when discussing innovation and therefore opens up opportunities for the IS field; however, the fact that management scholars are already publishing such studies (e.g. (Zammuto et al. 2007)) suggest that even this gap is already being filled. Fichman et al (2014) acknowledge this troubling issue: “Does embracing digital innovation … open up … the IS field to [challenges] from other disciplines that have some claim to the innovation concept, especially our colleagues in the field of technology and innovation management?” (p. 337). By claiming that because digital innovation is made unique by distinctive characteristics of IT relating to Moore's Law, digitalization and network effects, it is enough to make digital innovation different from the object of study of other disciplines. But because the focus of this approach remains on the “object of study” rather than on the specific discursive formation, it is very likely that IS research will replicate much of the work that is undertaken by other disciplines. A solution to this conundrum lies in articulating a unique discursive formation, a set of rules that will be, by definition, always be uniquely different from the set of rules other disciplines adopt to study innovation.

The second example concerns an area of study that developed from answering the question in medicine: “Can we visually see diseases in the body.” Work in addressing this question led to the discovery of various neuroimaging technologies such as the CT and MRI scanners (Peeters et al. 1979). Because of the success of this technique in medicine and related disciplines such as neurology and psychiatry, other disciplines such as economics (Camerer et al. 2005), psychology (Lieberman 2007), sociology (Franks 2010) and marketing (Fugate 2007) are applying neuroimaging technologies. Not surprisingly, with active research in neuroeconomics, neuropsychology, neurosociology and neuromarketing, researchers in IS are applying neuroimaging technologies in a nascent but rapidly growing area called NeuroIS. It’s safe to assume that because the use of neuroimaging technologies in cognitive neuroscience has to do with the brain, and the brain has everything to do with human life, any human science can be expected to be impacted by developments in cognitive neuroscience to some extent. The question is what shape will this cross-disciplinary work take and will its impact be significant enough such that it will help progress the IS field?

By analysing the identity and discursive formation of, and the shape of questions asked in NeuroIS, we explore what’s IS about it and speculate on its future as a subfield of IS. What will make neuroIS unique and have its own identity is when it begins to create and enunciate relationships between objects it is
studying in different ways from neuroscience itself. In terms of questions, is NeuroIS asking IS-relevant questions that are not being asked by other disciplines, or they are being asked, but not addressed satisfactorily? The ICIS paper (Dimoka et al. 2007) that introduced NeuroIS to the IS community states that understanding of IS phenomena is advanced if we integrate cognitive neuroscience literature into the IS field and utilize functional neuroimaging tools to augment existing data collection methods. In other words, this genre of research has the potential of challenging existing theoretical constructs in order to accommodate the brain’s functioning in decision-making, risk management and other behaviours. Additionally, neuroimaging and neurophysiological tools offer a more “objective” method of collecting data especially those that self-reporting methods are incapable of collecting (e.g. unconscious behaviours), identify the localization of IS constructs in the brain, and help build superior IS theories.

These claims are repeated in follow-up studies including a list of seven potential areas of opportunities for applying neuroimaging tools (Dimoka et al. 2012; Dimoka et al. 2011).

In order to uncover progress stemming from this cross-disciplinary effort, the changes in the discursive formation provides some guidance. Is there any change in rules governing how the study is undertaken and how its results are concluded? Is there an increase in precision associated with the new neuroimaging methods? Are certain intellectual ideals abandoned? And are the shape of the statements and knowledge claims taking on different forms? The ultimate test that the cross-disciplinary effort is really gaining ground is when the effort is integrative and produces new IS concepts resulting from asking the right questions. An example of this integrative process can be seen when neuroimaging tools are applied in social psychology. Take the case of two strangers, one black the other white, pass each other in the street and exchange glances. Depending on which discursive formation is applied by the researcher, different questions will be asked. A cognitive neuroscientist might ask how specific brain systems will produce a specific emotion. Social psychologist, by contrast, will ask how the brain reacts and draw inferences based on existing stereotypes or cultural factors, in other words, how both perception and behaviour are altered.

In the past, researchers using psychophysiological techniques can only guess about the relationship on existing stereotypes or cultural factors, in other words, how both perception and behaviour are altered. These new efforts are being led by collaborations between social psychologists and cognitive neuroscientists resulting in a nascent field of social cognitive neuroscience. The evidence that this nascent field is heading in the right direction can be seen in three areas: (1) the change in the way the studies are undertaken by unifying and finding commonalities between disparate phenomena, (2) new studies that are parsing complex phenomena (e.g. memory related to social behaviour) into component processes, and (3) combining bottom-up research that focus on implications of cognitive neuroscience with top-down implications from social psychology. This endeavour is slowly constructing new concepts that either field would not have accomplished by itself, such as the concept of automatic stereotyping, unconscious evaluation of choices affecting attitudes and person perception (judging based on behaviours and vocal utterances), all of which is the result of the integration of cognitive neuroscience and social psychology (Blakemore et al. 2004).

Is the same level of integrative cross-disciplinary activity taking place in NeuroIS? It is tempting to pick classic studies in IS (e.g. TAM) and try to adapt them for use with neuroimaging systems. If undertaken in this fashion, such research may remain in the multidisciplinary mode without generating any disciplinary shifts that might signal the formation of a new discourse. The nature of the cross-disciplinary effort applying neuroimaging technology in IS research will then become just “brain mapping.” Guidance provided for NeuroIS emphasizes the importance of not only challenging existing assumptions or testing theories using the data that corresponds to brain activity (Dimoka 2012) but also properly locating the study within IS by making certain that “the points of departure and arrival of any NeuroIS study must be in the field of IS research ... concluding with findings that significantly advance the IS field” (vom Brocke and Liang 2014, p. 216). These guidelines emphasize the need for NeuroIS research to go beyond brain mapping.

There is evidence that some integration of disciplinary discourse is taking place. Among many other studies, Dimoka (2012) showed that trust and distrust are neurologically constructs suggesting that they are not on the same continuum, while Dimoka et al. (2011) demonstrates how IS constructs can be further refined using results from NeuroIS studies. Gregor et al. (2010) test a nomological network consisting of constructs for emotions and IS concepts of acceptance and e-loyalty. What is common with these studies is the application of human factors such as trust and emotions within an IS context. Typical of any human
phenomenon, both trust and emotions can be found studied in any human science. If we assume that the concept of online trust is a novel IS concept, how distinct is this concept from trust as understood in social psychology? As vom Brocke and Liang (2014) emphasized, NeuroIS “studies that originate from applying neuroscience strategies of inquiry, rather than from contributing to IS theory, are not beneficial to the field.” The question to ask is “What makes NeuroIS studies, IS studies? This essay concludes that if the studies are not just about strategies of using neuroimaging techniques or associated technologies (mostly technical), or purely about the human brain and its functions (mostly physiological or social), and there is a concern about information and how it is being processed by both the IT and the human element, these studies become admissible as IS studies. However, it remains to be seen how integrative future NeuroIS studies will become. A brief review of existing NeuroIS studies shows that the integration is limited and most are still focusing on techniques and methods, and not challenging existing assumptions, or inventing new concepts. If future NeuroIS studies ask questions that are not being asked by other disciplines, or other disciplines are incapable of asking them then, they will support the establishment of a true IS subfield and the help the IS field itself.

**Conclusion**

This essay began by introducing the concept of the disciplinary research question, distinguishing it from the typical research question asked by all researchers to guide their research. The research question becomes disciplinary only when it addresses and admits itself into the field’s unique discursive formation. For a multidisciplinary field like IS, a unique discursive formation is only possible when the field integrates the differing discursive formations of its reference disciplines, and starts acting like an interdisciplinary. By doing so, the IS field will be able to address novel and interesting questions that lie between the boundaries of those disciplines, consolidate its unique intellectual ideals, start building its own standards and methods of inquiry, its own culture and set of values, and exert a significant influence on other disciplines and knowledge. The IS field can start accomplishing these goals when it starts constructing disciplinary research questions.

**References**


